

I claim:

1. A smart card having a capability to store a voice annotation with a transaction, the smart card comprising:

a microphone that produces a voice annotation signal in response to transaction data generated from the transaction;

memory that stores the voice annotation signal linked to its respective transaction data;

a controller, coupled to the microphone and the memory, that controls smart card operation including user authorization, storage of the voice annotation signal, and storage of the respective transaction data; and

an input/output connector, coupled to the controller, that provides the controller with the transaction data.

2. The smart card of claim 1 and further including an analog to digital converter, coupled between the microphone and the controller, that converts the voice annotation signal to a digital voice annotation signal.

3. The smart card of claim 1 wherein the controller comprises an analog to digital conversion process that converts the voice annotation signal to a digital voice annotation signal.

4. The smart card of claim 1 and further including a plurality of switches that control operation of the microphone.

5. The smart card of claim 4 wherein the plurality of switches are membrane switches.

6. The smart card of claim 4 wherein the plurality of switches are formed on a touchscreen display that is coupled to the controller.

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7. The smart card of claim 1 wherein smart card operations additionally comprises user authorization.

8. A method for entering a voice annotation into a smart card having memory for storing a first transaction and its respective voice annotation, the smart card further comprising an I/O connector and a microphone, the first transaction comprising transactional data, the method comprising the steps of:

receiving a user authorization code;

receiving the first transactional data through the I/O connector;

recording, through the microphone, the respective voice annotation related to the first transactional data; and

storing the first transactional data and its respective voice annotation in the memory.

9. The method of claim 8 and further including the steps of:

prompting for the voice annotation that describes the first transactional data;

and

if the voice annotation is not entered, storing the first transactional data in the memory.

10. The method of claim 8 wherein the first transactional data comprises a monetary value and a transaction date.

11. The method of claim 10 wherein the step of storing includes deducting the monetary value from an account balance stored in the memory.

12. The method of claim 8 wherein the step of receiving a user authorization code comprises receiving a voice authorization.

13. The method of claim 12 and further comprising the step of comparing the voice authorization code to an authorization code stored in the memory.

14. A smart card system that reads transactional data and any respective voice annotations from a smart card memory, the system comprising:

a printer comprising a controller that performs a transactional data and voice annotation retrieval process on the smart card; and

a smart card reader, coupled to the controller, that accepts the smart card and couples to electrical contacts on the smart card in order to retrieve the transactional data and voice annotation.

15. The smart card system of claim 14 wherein the smart card reader is coupled to the controller through a universal serial bus structure.

16. The smart card system of claim 14 wherein the controller has a capability to print the transactional data and a respective voice annotation.

17. The smart card system of claim 16 wherein the controller performs a transcription process on the transactional data and the respective voice annotation whereby the voice annotation is converted from a digital voice signal to digital text data prior to printing.

18. The smart card system of claim 14 and further including a computer coupled to the printer through a bus structure, the computer comprising the smart card reader.

19. A method for retrieving a digital voice annotation from a smart card having a capability to store the voice annotation with its respective transactional data in memory, the method comprising the steps of:

retrieving the digital voice annotation signal from the memory;

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prompting to perform either a broadcast of the digital voice annotation signal or a conversion of the digital voice annotation signal to text data;

if the broadcast of the digital voice annotation signal is selected, converting the digital voice annotation signal to an analog voice annotation signal and converting to an aural signal with a speaker device; and

if the conversion to text data is selected, converting the digital voice annotation signal to text data.

20. The method of claim 18 and further including the step of displaying the text data.

21. The method of claim 19 wherein the step of displaying comprises printing the text data on print media.

22. A smart card sleeve apparatus that couples to a smart card, the smart card comprising a controller coupled to contacts and memory for storing transactional data and its respective voice annotations, the sleeve apparatus comprising:

contacts within the sleeve that couple to the smart card contacts to provide access to the smart card controller and memory;

a microphone, coupled to the contacts, that provides an analog voice annotation signal to the smart card; and

control switches, coupled to the contacts, that provide control signals to the smart card.

23. The sleeve apparatus of claim 22 and further including a speaker that broadcasts the voice annotations from the smart card memory.

24. The sleeve apparatus of claim 22 and further including a sleeve controller, coupled to the microphone and control switches, that performs control processes to control the operation of the sleeve apparatus.

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- Figure 1 consists of 15 bar charts, labeled (a) through (o), arranged in a grid. Each chart shows the percentage of total protein in various fractions (A, B, C, D, E, F, G, H, I, J, K, L, M, N, O) for different protein types (A, B, C, D, E, F, G, H, I, J, K, L, M, N, O) across different conditions (1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15). The charts are arranged in a grid, with some charts having multiple y-axes. The x-axis for all charts is 'Protein type' and the y-axis is 'Percentage of total protein'.